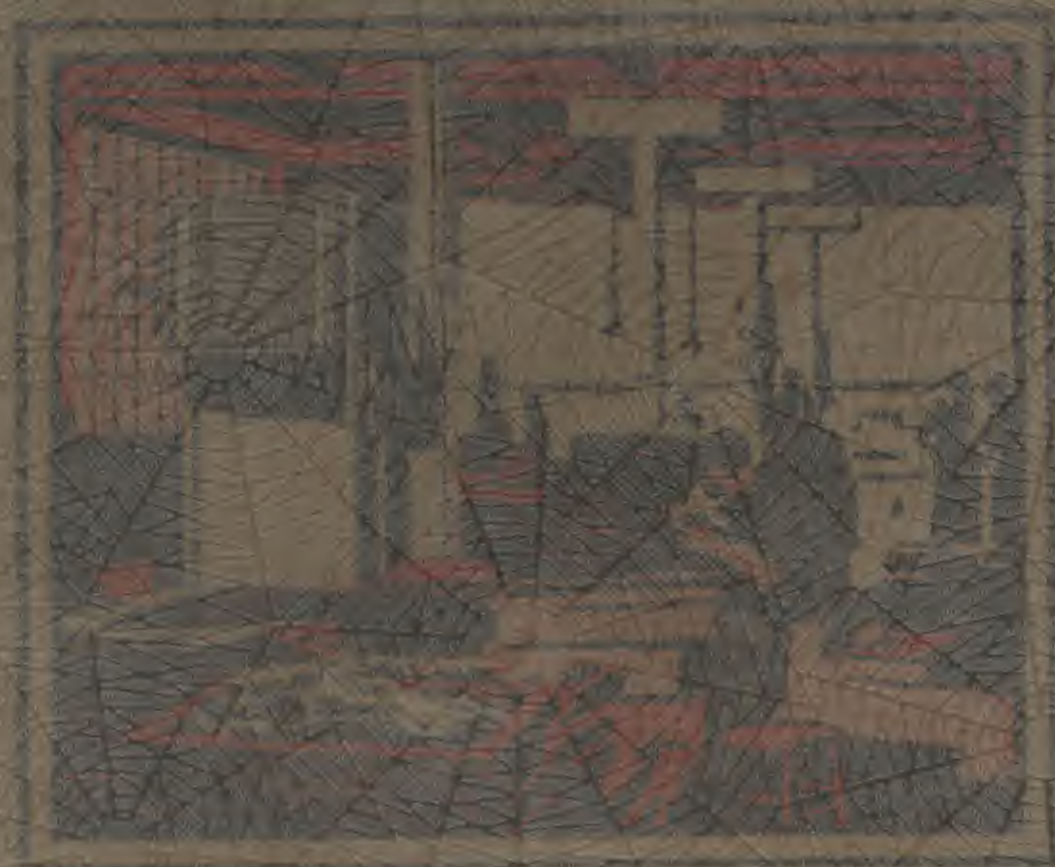


The
VENTURAFIN
Method of Heating



AMERICAN BLOWER COMPANY

DETROIT, MICHIGAN, U.S.A.

Bulletin 5618

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American Blower

VENTILATING, HEATING AND POWER EQUIPMENT. THE AMERICAN BLOWER CO. CHICAGO, ILL.
Manufacturers of all types of Blowing and Heating Equipment. Since 1890

Venturafin - - - the Modern Heating Method for Factories, Warehouses, Auditoriums, Garages, Stores, etc.

After more than 40 years in the manufacture of Air Handling Equipment of every kind and description, the American Blower Company foresaw a great need for a heating method which would be positive in operation, economical to operate, and more efficient than any of the methods existing at the time.

American Blower engineers, backed by the vast resources and experience of the American Blower Company, set out to develop a method of heating that would meet their ideals.

The Venturafin Method of Heating was the result. Still, the American Blower Company and American Blower engineers were not willing to put this method of heating before the public without it being tried under varying climatic conditions, in buildings of different types, including those in

which the requirements for heating were extraordinary.

The Venturafin Method of Heating was, therefore, installed in a number of industries located in various parts of the country. After three years of use under the actual working conditions to which a heating plant is subjected, the American Blower Company announced to the public the perfection of this new heating method.

Results never before achieved—tremendous heating efficiency, light weight, complete control of heat under all conditions, and considerable savings in first costs, installation costs and maintenance cost—have been accomplished.

The Venturafin Method of Heating is now an accepted standard, backed by the reputation, experience, and knowledge of the entire American Blower Company organization.

Only This Method of Heating Gives These Remarkable Advantages



Fig. 1—Sectional View No. 4 Venturafin Unit with Recirculating Box

1. More than 5 times the heating efficiency of direct radiation.
2. One-tenth the weight of direct radiation.
3. One-fourth the space of direct radiation.
4. Much less time to install than direct radiation.
5. Positive heat in the most severe weather.
6. Even distribution of heat.
7. The ability to heat up more quickly than direct radiation.
8. Adaptable to practically any position without loss of efficiency.
9. Considerably less heat loss through walls than with direct radiation.
10. Low cost of installation.
11. Considerable saving in fuel.
12. The minimum of maintenance costs.
13. Copper and brass coils, non-corrosive, not fragile.
14. Portability without great expense.
15. Ventilation possible as well as heating.
16. No alterations necessary to install.
17. Applicable to practically any heating need without special construction of units.
18. Practically indestructible.
19. Simplicity.
20. Ease of control.

Very Light Weight and Extremely Compact Design, Coupled With Astonishing Efficiency are Provided in Venturafin Units!

Venturafin Units are so constructed that they have more than 5 times the efficiency of direct radiation—yet they weigh only 1/10 as much as an equivalent amount of direct radiation and occupy $\frac{1}{4}$ the space.

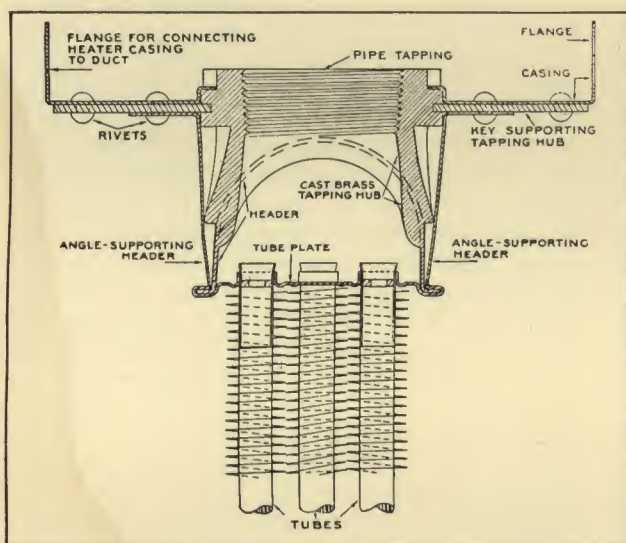


Fig. 2—Cross Section of Heater Showing Construction

Each Venturafin Unit consists of three distinct parts: an Aerofin heating coil, a Ventura Fan, and a Recirculating Box.

The Aerofin Heating Coil is made of steam coils of copper and brass, both offering far less resistance to the transmission of heat and weighing much less than iron. Each coil is helically wound with a brass ribbon in such a way that it forms a continuous fin. This fin is so bent that a large surface of the fin is in contact with the outer surface of the tube (see diagram above) and this union is later treated so that fin and tube become metallically integral. By means of this construction which is patented, the heat transmitting surface is made nearly 5 times greater than that of the tube alone.

The Ventura Fan as used with the Venturafin Unit is the most efficient type of disc fan made.

It has ten overlapping blades made of heavy steel plate, screw propeller shaped to give maximum air capacity. It is equipped with a large central disc which prevents the air from short circuiting back through the center of the wheel

where the propelling force is least. The fan is driven by a fully enclosed industrial type over-size motor, made by the largest manufacturers of electric motors in the world. This combination of heavy duty motor and Ventura Fan forms a practically indestructible unit; insures a definite, positive air circulation through the heater at all times, and affords a sure method of heat control—one of the most valuable and important factors in industrial heating.

The recirculating box which completes the Venturafin Unit is made of heavy sheet steel, machine-formed and folded at all joints, making a positively air tight joint—without raw or sharp edges of the steel projecting on the smaller size, and with sheet steel on a heavy structural frame on the larger size.

The entire unit is a very neat appearing, sturdy and symmetrical outfit which will not detract from the appearance of any building.



Fig. 3—No. 7 Venturafin Unit without Recirculating Box

Venturafin Units are Made in Two Sizes—Adaptable to Practically Every Heating Requirement — —

Venturafin Units are made in two sizes—a number four unit and a number seven unit. The number four unit is the smaller of the two. It is used mostly for heating smaller buildings such as garages, stock-rooms, stores, small shops, light manufacturing plants and the like, where a com-

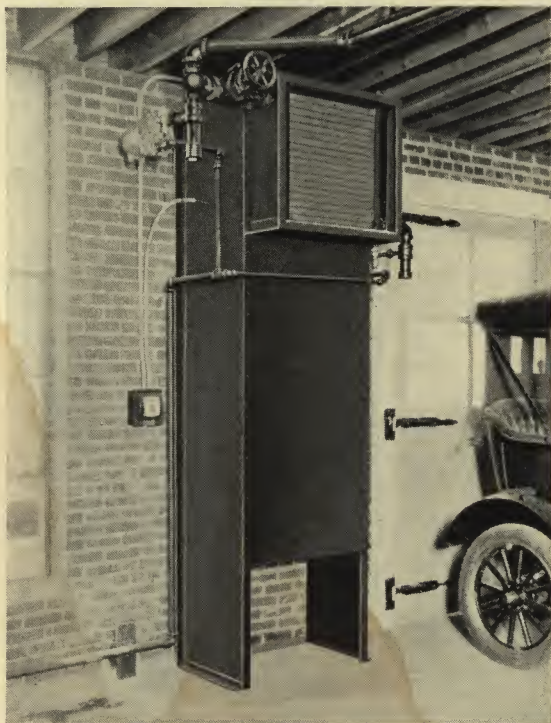


Fig. 4—No. 4 Venturafin Unit with Recirculating Box—Installed

pact outfit requiring little room is needed to heat a limited space, or where the construction of the building is such as to require the use of a number of small units.

The heating surface of the number four unit consists of an Aerofin section with tubes two feet long and three rows deep. The fan operates at approximately 900 revolutions per minute, giving a capacity of 2000 cubic feet of air per minute. Its capacity ranges from 155,000 B. T. U. per hour with room temperature of 30 degrees down to 125,000 B. T. U. per hour when the room temperature is 70 degrees.

The Venturafin number seven has about four

times the capacity of the number four unit. The number seven unit delivers 620,000 B. T. U. per hour with room temperature of 30 degrees. At temperature of 70 degrees its capacity is 500,000 B. T. U. per hour. The fan in this unit operates at approximately 560 revolutions per minute, delivering 8000 cubic feet of air per minute.

The number seven Venturafin Unit is especially adaptable to large areas and extremely difficult heating jobs. It has been used with great success in the largest industrial plants, in warehouses, coliseums, public buildings, depots, and large garages. The number seven unit when used as an assembly combining two, three, or four units, concentrates heating apparatus, saves floor space and gives remarkable heating results for large areas.

To give the greatest heating efficiency at all times, Venturafin Units should be mounted on recirculating boxes. These draw the cold air from the floor, whence it is forced over the heating coils and back into the areas to be heated. It is frequently found that in mild weather the fans can be shut down after the building is heated up in the morning leaving steam on the heater. The circulation through the boxes is sufficient to maintain a comfortable temperature. This reduces operating costs.

The recirculating boxes are fitted with doors for convenience in oiling or inspecting motors.

They form a natural protection and guard for the fan and motor, making it impossible for careless persons to injure these working parts in any way. By providing an opening through the outside wall of the building into the recirculating box ventilation can be taken care of very easily by supplying the fan with either part or all fresh outdoor air. The design of the entire units is such as to make the installation a very simple matter.



Fig. 5—No. 7 Venturafin Unit with Recirculating Box

Venturafin Has Already Been Installed in Buildings of Practically Every Type and Description — —

The Venturafin Method of Heating has already been installed in garages, packing houses, factories, bakeries, assembly halls, stores, creameries, warehouses, and amphitheatres, and the results have exceeded our greatest expectations. Not within our recollection has the American Blower Company or any other company placed anything on the market which has been accepted so quickly and so generally as the Venturafin Method of Heating.

Almost every installation has brought back an unsolicited testimonial of satisfaction.

Under climatic conditions of all kinds, from the most severe weather to mild, damp cold, and in structures of all sizes and types, the Venturafin Method of Heating has proved its superiority.

Even in temporary buildings that were not constructed to be heated at all the Venturafin

Method has been used with astonishing success. The world's largest amphitheatre, The Coliseum, Detroit, Michigan, presented a tremendous heating problem—one which if not satisfactorily solved meant a loss of many thousands of dollars yearly to its owners. The Venturafin Method of Heating was the answer.

In factories where the Venturafin Method of Heating has been installed to heat new additions, re-orders have been placed for additional Venturafin equipment to supplant the old heating equipment in the rest of the factory.

The Venturafin Heating Method is applicable to every heating problem. High buildings, long and narrow structures, factories, stores and warehouses can be benefited by its great efficiency, supreme economy, light weight and dependability.

Packing Houses	Beverage Manufacturing Plants	Glass Works
Paper Mills	Textile Mills	Stores
Pipe Works	Soap Factories	Paper Box Factories
Garages	Public Service Power Houses	Nail Mills
Shade Factories	Shoe Factories	Sales and Service Stations
Machine Shops	Yeast Factories	Malleable Iron Works
Planing Mills	Basements	Furniture Factories
Bakeries	Bolt and Nut Works	Chemical Factories
Electrical Factories	Wire Works	Office Supply Factories
Automobile Body Plants	Spinning Mills	Laboratories
Furnace Specialty Manufacturers	Hardware Manufacturers	Printing Establishments
Automobile Factories	Lamp Works	Repair Shops
Gymnasiums	Potteries	Enamelware Factories
Creameries		Storerooms
Dairies		Warehouses

A Few Photographs of Typ-

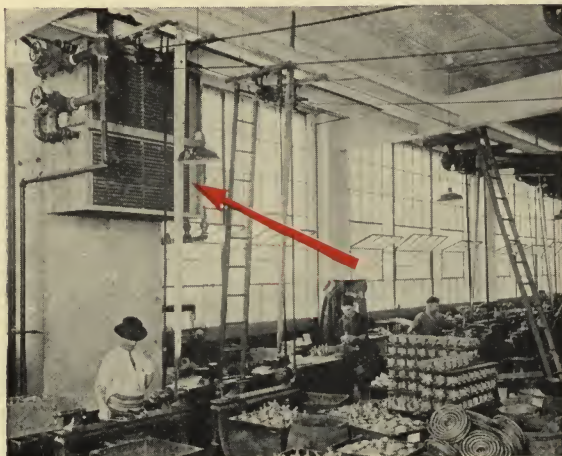


Fig. 6

The above photograph shows a Venturafin Unit installed in the inspection and machine department of a leading manufacturer of hot water heaters.

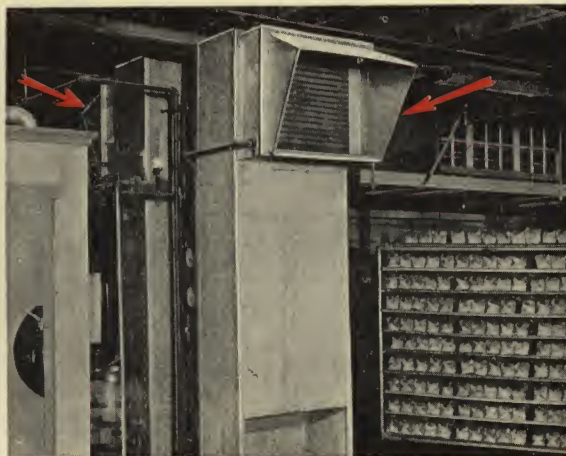


Fig. 7

These two Venturafin Units heat the shipping and wrapping rooms of one of the world's largest bakeries where proper working temperature means greater efficiency and more profit.

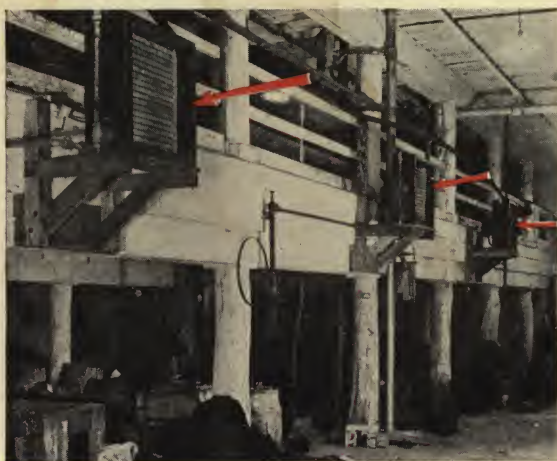


Fig. 8

This foundry is heated by Venturafin Units (without recirculating boxes). Note the out-of-the-way position of units.

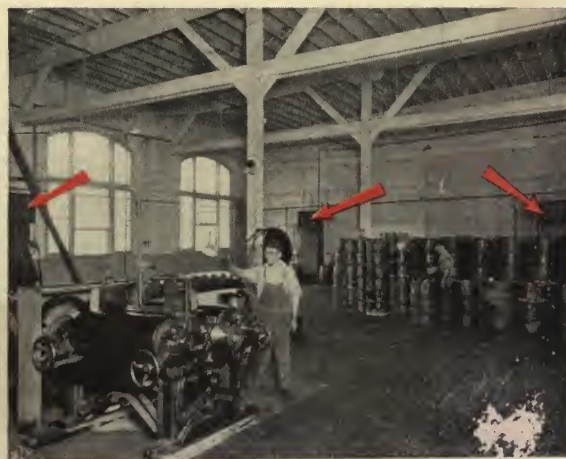


Fig. 9

This large manufacturing plant is heated throughout by the Venturafin Method of Heating—another installation where temperature control is an important factor.

ical Venturafin Installations



Fig. 10

The Venturafin Method of Heating reduces labor turnover in this machine shop through its ability to maintain proper temperatures even during the most severe cold spells.



Fig. 11

This folding box establishment is heated by Venturafin Units (without recirculating boxes) mounted in out-of-the-way places about the walls.



Fig. 12

A close-up view of a unit of the Venturafin Method of Heating installed along the outer wall of a large manufacturing plant. Note the compactness of this unit and how it is installed without costly supports, special platforms or wall braces.



Fig. 13

Automobile body building demands lots of light, which necessitates large window areas—ordinarily a very difficult heating problem—but easily and economically solved with the Venturafin Method of Heating.

Note the Wide Variety of Buildo

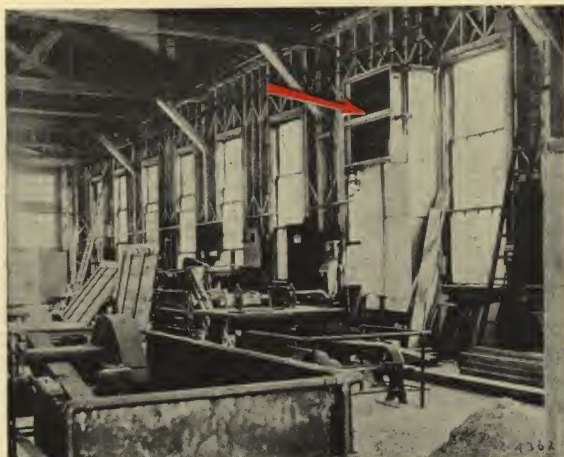


Fig. 14

One Venturafin Unit heats a large area in this railroad shop, even though it is a very old building, constructed of wood and not even finished off on the inside.



Fig. 15

The press room of this large printing house is heated by a battery of four Venturafin Units placed in the center of the room. Note how the Venturafin Method of Heating conforms with the appearance of this well kept plant.

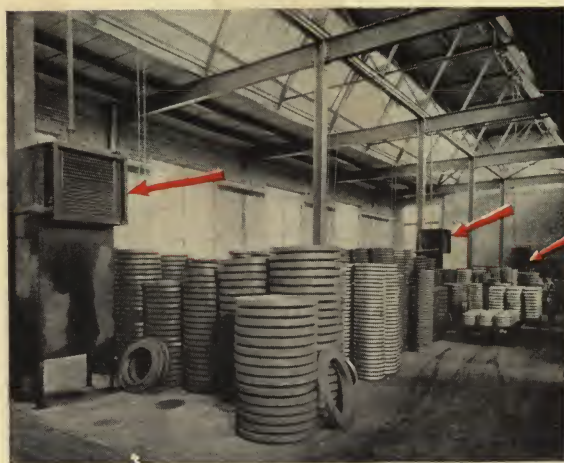


Fig. 16

This manufacturer of spiral pipe has a bulky and heavy product to handle—The efficiency of the Venturafin Method of Heating saves valuable floor space in this plant.



Fig. 17

This close-up view of one of the Venturafin Units in Figure 16, shows the sturdy construction of the unit and also how material can be piled about unit without impairing the heating.

Buildings Successfully Heated — —



Fig. 18

The above photograph shows Venturafin Units (without recirculating boxes) in the balcony of a large department store. By this method of application all heating equipment is eliminated from the first floor and heat is actually forced all over the store.

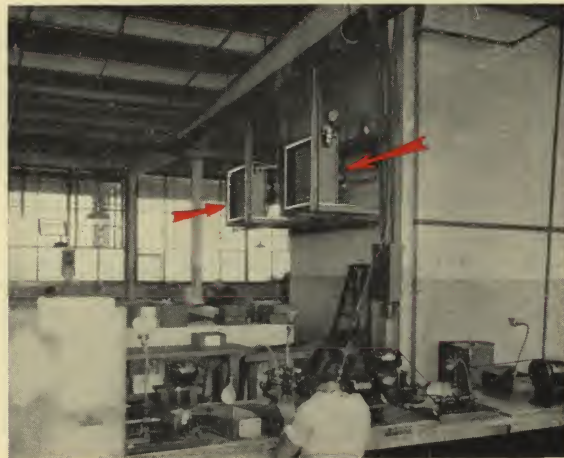


Fig. 19

The scale plant shown above employs a large number of women, which necessitates good heating. Two Venturafin Units mounted in an out-of-the-way position on the wall (without recirculating boxes) are furnishing heat for this large room.



Fig. 20

This large automobile showroom clearly demonstrates the wide adaptability of the Venturafin Method of Heating. Notice how the Venturafin Units have been installed in the partition, which not only saves floor space but actually improves the appearance of the room—a very important thing for the owner.

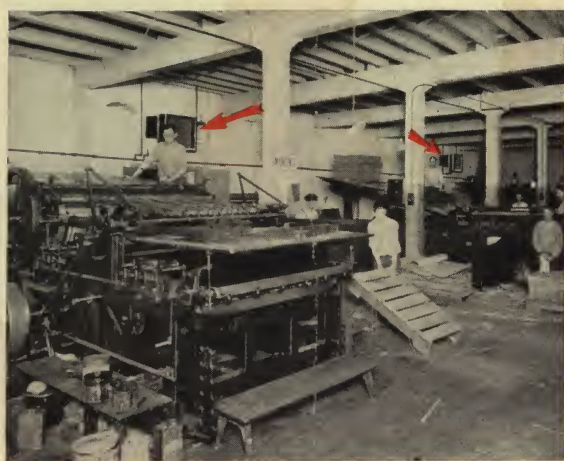


Fig. 21

Venturafin Units (without recirculating boxes) are shown forcing the heat out into the working areas of this printing establishment. Even though the units are placed almost up to the ceiling, that does not interfere with their remarkable heating efficiency.

Venturafin Units can be placed any-



Fig. 22

For garages, the Venturafin Method of Heating is the ideal system. It gives a positive heating control that is out of the question with ordinary heating methods, and the units can be so placed that the opening and closing of doors even during the most severe weather will hardly be noticed.



Fig. 23

This large manufacturing plant is heated throughout by Venturafin Units hung from the girders along the central partition. By alternating the direction of every other unit, the whole area of this odd shaped building is adequately heated.

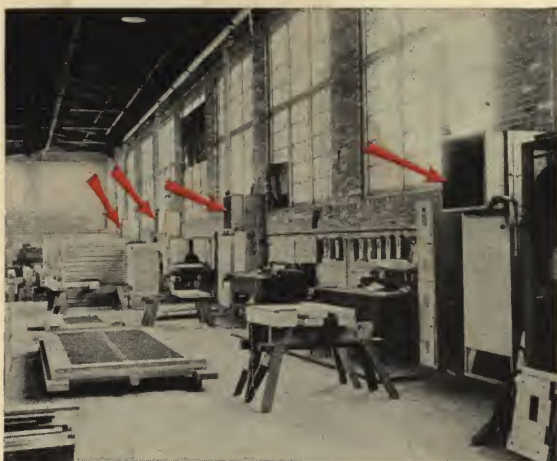


Fig. 24

A high area always presents a very difficult heating problem because of the number of drafts and the difficulty in placing heating equipment properly. The fact that Venturafin Units can be placed anywhere, yet they throw heat everywhere, makes them ideal units for high structures.



Fig. 25

The above photograph shows Venturafin Units (without recirculating boxes) in the world's largest amphitheatre. Note the large area to be heated and the distance between units.

where—yet they throw heat everywhere



Fig. 26

Men cannot properly work in cold weather without sufficient heat. The owner of this machine shop has solved his heating problem without cluttering his walls or interfering with the belting of his machines, by installing the Venturafin Method of Heating which forces heat all over the shop.

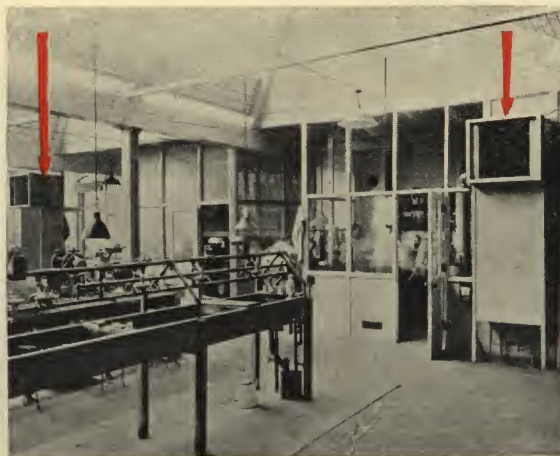


Fig. 27

This manufacturing jeweler uses the Venturafin Method of Heating in his shop where highly skilled workers must be warm. The Venturafin Method of Heating not only furnishes heat in any desired amount, but does it in a very economical manner.

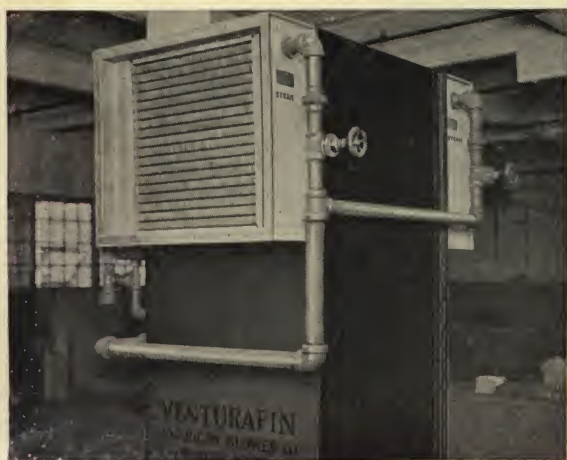


Fig. 28

Large industrial plants have always presented a very difficult problem of heating. This is due to the fact that ordinary equipment made it necessary to have too much heat in some spots in order that the areas farthest away from the heaters could be made warm enough to work in. The Venturafin Method of Heating eliminates this by forcing heat in any desired direction.



Fig. 29

The above photograph shows a model factory before it is equipped with machines. Notice how free from obstruction the whole area is, the lack of ordinary radiation and pipes—and the provisions made for proper light. The reason is the Venturafin Method of Heating has been specified.

The "Why" of this sound,

A Ventura Fan driven by a fully enclosed over - size industrial type electric motor insures a definite positive air circulation through the heater—enables the amount of heat to be regulated and actually forces the heat over a wide area in the direction desired.

A large central disc prevents back flow of air through the fan wheel and true propeller shaped blades give the maximum efficiency.

A recirculating box completes the Venturafin Unit—it takes the air off the floor and feeds it to the fan, whence it is forced over the heating coils and back into circulation. The complete unit represents the most scientific method of industrial heating. It is based on sound, proved principles.

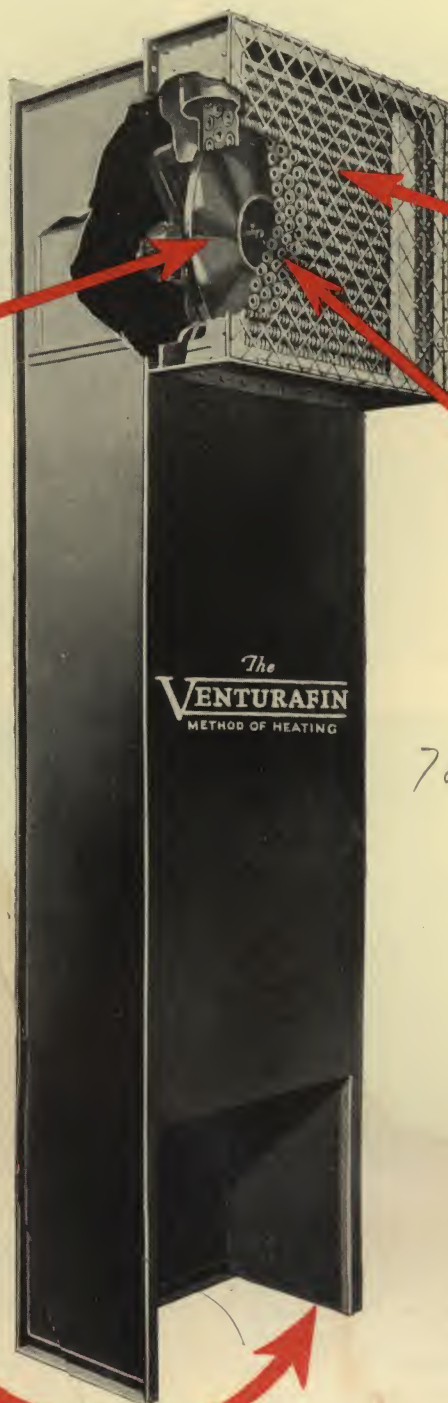


Fig. 30—Sectional View No. 4 Venturafin Unit with Recirculating Box

proven heating method

Heat is forced over the highly efficient Aero-fin heating coils (described below) into the areas to be heated and not into one corner of the room or against the wall. This feature in itself more than justifies the use of the Venturafin Method of Heating—it reduces heat loss to a minimum, enables the Venturafin Method to heat up more quickly at any time—makes it possible to keep even temperatures over large areas—and aids ventilation.

The Aero-fin heating coil is made of tubes of copper and brass, each tube helically wound with a continuous fin. By this construction, which is patented, the heat transmitting surface of the tubes are made nearly five times greater. This not only gives greater heating efficiency, but also enables a light, compact unit to do the work otherwise accomplished by a large and bulky one.



Fig. 31

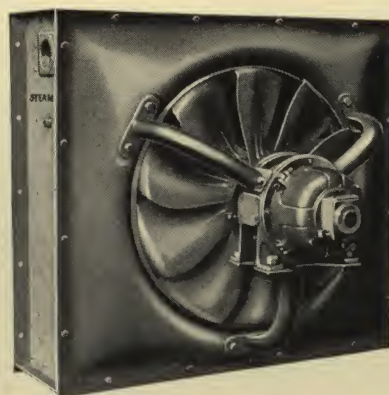


Fig. 32

THE NO. 4 VENTURAFIN UNIT

Venturafin Units are made in two sizes. The No. 4 unit (above) is the equivalent of 500 square feet of direct radiation and has a capacity of 175,000 B.T.U. per hour (based on 5 lbs. steam pressure at the heater) with an initial or room temperature of 30 degrees and a final temperature of 105.4 degrees, down to 125,000 B.T.U. per hour when the initial temperature is 70 degrees and the final 128 degrees.

Equivalent to 500 square feet of direct radiation.



Fig. 33

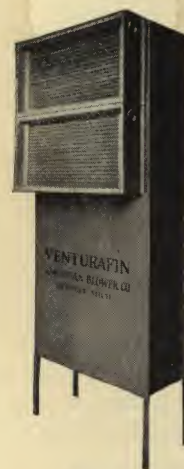


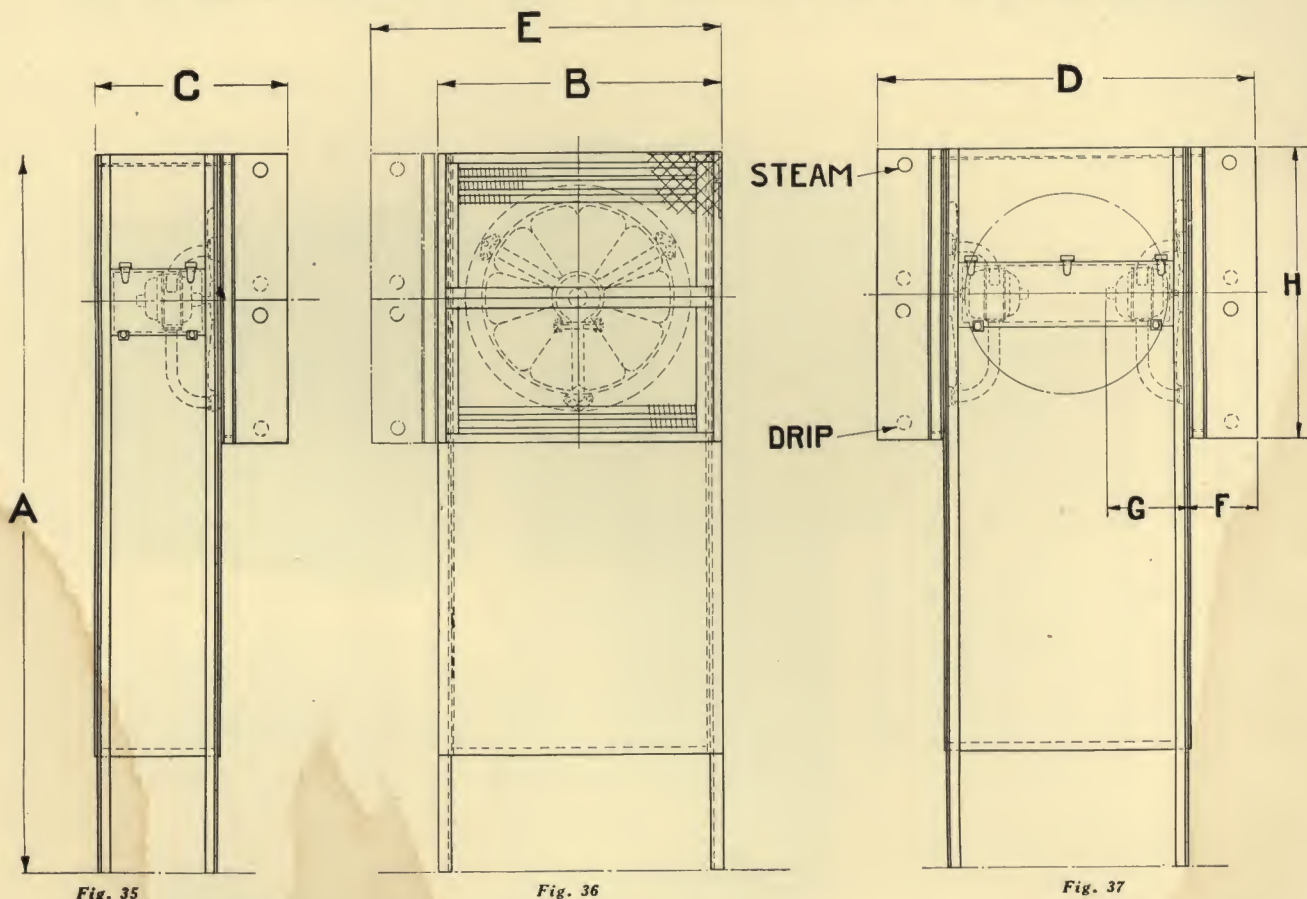
Fig. 34

THE No. 7 VENTURAFIN UNIT

The No. 7 Venturafin is the larger of the two units. It is the equivalent of approximately 2,000 square feet of direct radiation (4 times the capacity of the smaller unit). It delivers 700,000 B.T.U. per hour with an initial or room temperature of 30 degrees and a final temperature of 105.4 degrees. At initial temperature of 70 degrees and final temperature of 128 degrees its capacity is 500,000 B.T.U. per hour (based on 5 lbs. steam pressure at the heater).

Equivalent to 2000 square feet of direct radiation.

The Venturafin Method of Heating



DIMENSIONS AND WEIGHTS

Dimensions										Approximate Shipping Weight (Lbs.)		
No.	Type	A	B	C	D	E	F	G	H	No.	Heater Only	Recir. Box Only
4	Single	120	32 1/2	28 1/2	.....	.....	10 1/8	16 7/8	29	4	350	Single 300
4	Double	120	32 1/2	.....	56 7/8	.....	10 1/8	16 7/8	29			Double 340
4	Triple	120	39	.....	59 7/8	49 1/2	10 1/8	16 7/8	29			Triple 380
7	Single	144	56 1/2	37 3/8	.....	.....	13 1/8	23 1/2	58	7	1120	Single 600
7	Double	144	56 1/2	.....	83 1/2	.....	13 1/8	23 1/2	58			Double 680
7	Triple	144	56 1/2	.....	83 1/2	70	13 1/8	23 1/2	58			Triple 760

Dimensions are in inches; they are approximate only and should not be used for construction purposes unless certified.

The recirculating box for the No. 4 heater is made of No. 16 gauge steel with machine folded corners.

The recirculating box for the No. 7 heater is made of No. 14 gauge steel.

The heater element in the No. 4 Venturafin is made in one section, and that in the No. 7 in two sections.

The chart indicates the position of the two sections in the No. 7. Dimensions apply to either the No. 4 or the No. 7, as noted in the table.

Figure 35 illustrates the installation of a single heater unit, showing the dimensions looking at the unit edgewise. The dimensions in the other direction are as indicated in Figure 36, Dimension B.

Figure 36 shows a two-heater unit with the heaters on opposite sides. There is also a dotted line addition at the left to indicate the dimensions if the heaters are placed on adjoining sides. The dimensions of this heater in the opposite direction from that shown are as indicated in Figure 37, Dimension D.

Figure 37 shows a three-heater unit. The dimension in the opposite direction from that shown is indicated in Dimension E in Figure 36.

The Venturafin Method of Heating

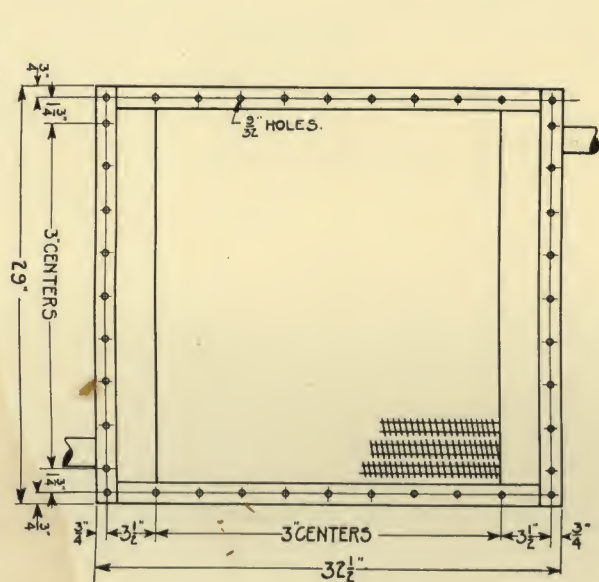


Fig. 38—No. 4

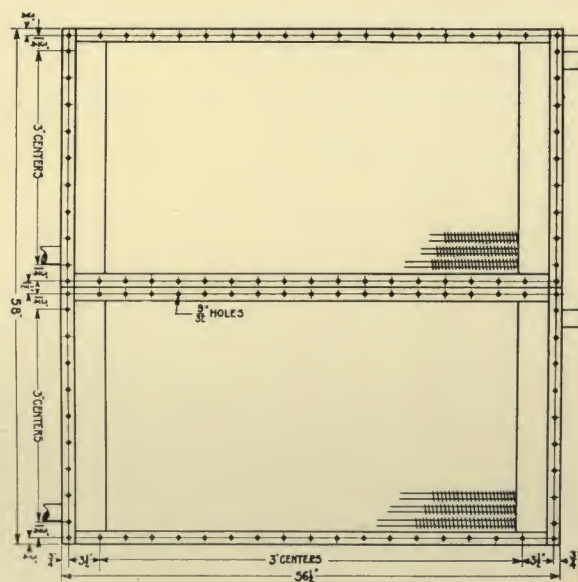


Fig. 39—No. 7

Face Dimensions of Venturafin Heater Elements

PRICES AND DATA

Prices						Data									
Venturafin Heater			One Recirculating Box Arranged for			D. C. and 60-Cycle A. C.				25-Cycle A. C.				Length of Tubes in Heater*	Number of Steam Connections in Steam—2' Drip—2'
No.	D.C. & Poly-Phase 60 Cycle A. C.	Single Phase 25 Cycle A. C.	One Heater	Two Heaters	Three Heaters	Cu. Ft. per Min.	R.P.M.	Room Temperature	B.T.U. per Hour	Cu. Ft. per Min.	R.P.M.	Room Temperature	B. T. U. per Hour		
4	\$178	\$178	\$ 50	\$ 60	\$ 70	2,000	900	30° 40° 50° 60° 70°	155,000 147,000 140,000 132,000 125,000	1,700	720	30° 40° 50° 60° 70°	135,000 130,000 115,000 120,000 114,000	2 ft.	one supply one drip
7	530	580	150	170	190	8,000	560	30° 40° 50° 60° 70°	620,000 590,000 560,000 530,000 500,000	6,800	470	30° 40° 50° 60° 70°	540,000 520,000 500,000 480,000 458,000	4 ft.	two supply two drip

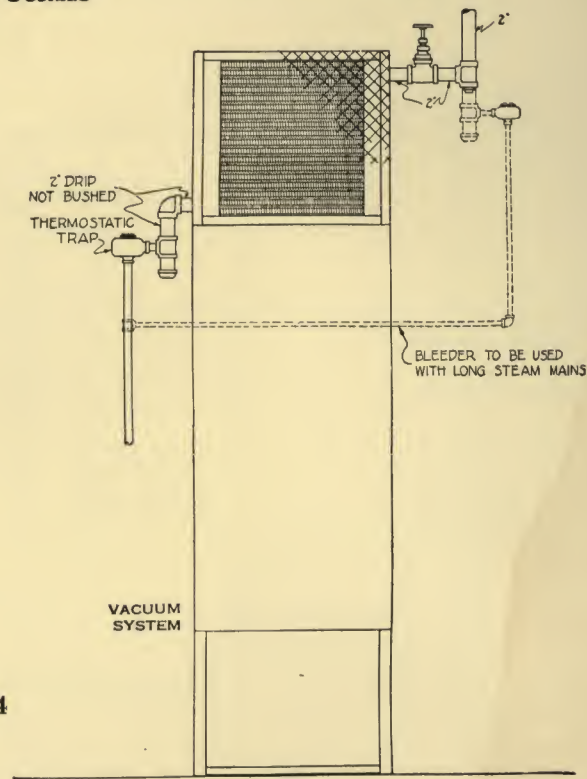
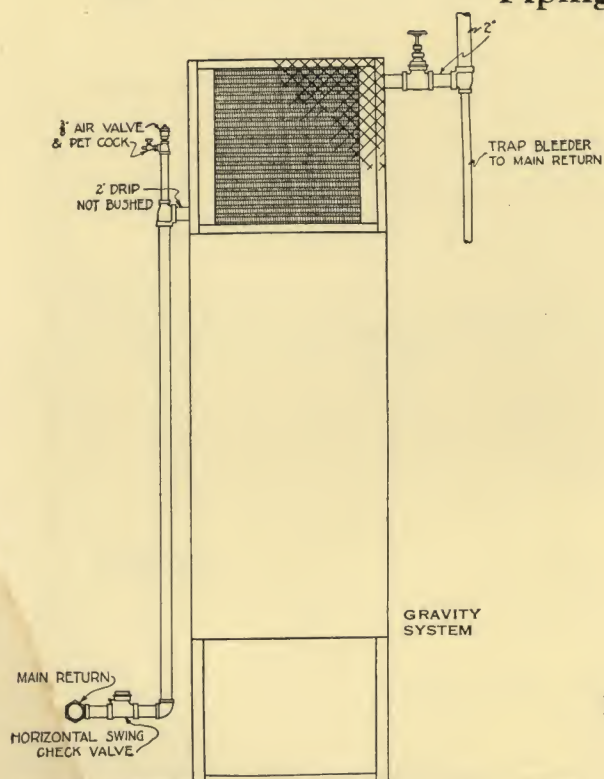
*All Standard Heaters have tubes 3 rows deep.

The No. 4 Unit is equivalent to 500 square feet of direct radiation, and the No. 7 Unit is equivalent to 2,000 square feet of direct radiation.

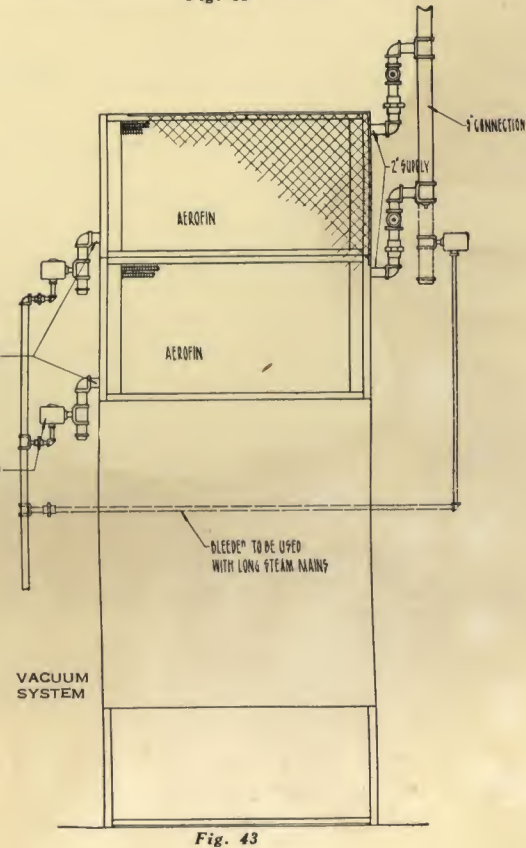
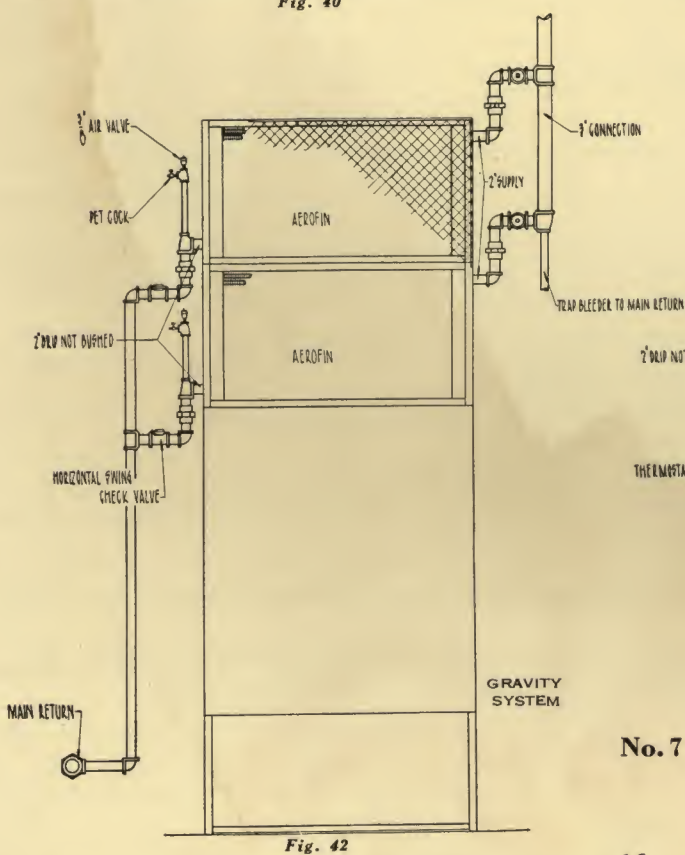
Direct current units are always equipped with speed regulators for reducing the fan speed when desired. Regulators can be furnished for use with single phase alternating current units at a slight additional cost.

The Venturafin Method of Heating

Piping Details



No. 4



No. 7

American Blower Company

General Offices, Detroit

Works: Detroit, Mich., Bond Hill, Cincinnati, Ohio

Branches and Sales Offices

CITY	ADDRESS
Atlanta, Ga.	Bona Allen Bldg.
Baltimore, Md.	American Bldg.
Birmingham, Ala.	American Trust Bldg.
Boston, Mass.	10 High St.
Buffalo, N. Y.	White Bldg.
Charlotte, N. C.	Piedmont Bldg.
Chicago, Ill.	140 S. Dearborn St.
Cincinnati, O.	Keith Bldg.
Cleveland, O.	Swetland Bldg.
Columbus, O.	First National Bank Bldg.
Dallas, Tex.	Mercantile Bank Bldg.
Davenport, Iowa	Kahl Bldg.
Denver, Colo.	1228 California St.
Detroit, Mich.	2539 Woodward Ave.
El Paso, Texas	1520 North Campbell St.
Grand Rapids, Mich.	Shepard Bldg.
Indianapolis, Ind.	Continental Bank Bldg.
Kansas City, Mo.	Mutual Bldg.
Louisville, Ky.	428 South Fifth St.
Los Angeles, Cal.	Detwiler Bldg.
Milwaukee, Wis.	Majestic Bldg.
Minneapolis, Minn.	808 LaSalle Ave.
New Orleans, La.	344 Camp St.
New York, N. Y.	50 Church St.
Omaha, Neb.	Peters Trust Bldg.
Philadelphia, Pa.	112 S. 16th St.
Pittsburgh, Pa.	Oliver Bldg.
Portland, Ore.	Pacific Bldg.
Rochester, N. Y.	Cutler Bldg.
Salt Lake City, Utah	Dooly Bldg.
San Francisco, Cal.	Rialto Bldg.
Seattle, Wash.	Leary Bldg.
Schenectady, N. Y.	147 Jay St.
St. Louis, Mo.	Boatmen's Bank Bldg.
Syracuse, N. Y.	1611 East Genesee St.
Tacoma, Wash.	1127 St. Paul Ave.

Canadian Sirocco Co., Ltd.

Calgary, Alta.	605 W. Second St.
Montreal, Quebec	144 Inspector St.
Winnipeg, Man.	567 Banning St.
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